

**PATENT COOPERATION TREATY**

**PCT**

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**INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY**

(Chapter II of the Patent Cooperation Treaty)

**(PCT Article 36 and Rule 70)**

Applicant's or agent's file reference PC557 ED	<b>FOR FURTHER ACTION</b>	
See Form PCT/IPEA/416		
International application No. PCT/T2004/000386	International filing date (day/month/year) 12.07.2004	Priority date (day/month/year) 14.07.2003
International Patent Classification (IPC) or national classification and IPC G06F17/60, G06F17/16		
Applicant GIUDILLI, Michele		
<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 5 sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input checked="" type="checkbox"/> <i>(sent to the applicant and to the International Bureau)</i> a total of 22 sheets, as follows:</p> <ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</li> <li><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</li> </ul> <p>b. <input type="checkbox"/> <i>(sent to the International Bureau only)</i> a total of (indicate type and number of electronic carrier(s)), containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>		
<p>4. This report contains indications relating to the following items:</p> <ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Box No. I Basis of the opinion</li> <li><input type="checkbox"/> Box No. II Priority</li> <li><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</li> <li><input type="checkbox"/> Box No. IV Lack of unity of invention</li> <li><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</li> <li><input type="checkbox"/> Box No. VI Certain documents cited</li> <li><input type="checkbox"/> Box No. VII Certain defects in the international application</li> <li><input type="checkbox"/> Box No. VIII Certain observations on the international application</li> </ul>		
Date of submission of the demand 13.05.2005	Date of completion of this report 11.10.2005	
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized Officer  Ceccarini, G  Telephone No. +49 89 2399-2997	



**INTERNATIONAL PRELIMINARY REPORT  
ON PATENTABILITY**

International application No.  
PCT/IT2004/000386

**Box No. I Basis of the report**

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
  - This report is based on translations from the original language into the following language, which is the language of a translation furnished for the purposes of:
    - International search (under Rules 12.3 and 23.1(b))
    - publication of the international application (under Rule 12.4)
    - international preliminary examination (under Rules 55.2 and/or 55.3)
2. With regard to the elements\* of the international application, this report is based on (*replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report*):

**Description, Pages**

9, 11-22	as originally filed
1, 2, 2a, 2b, 3-6, 6a, 7, 8, 10	received on 26.09.2005 with letter of 19.09.2005

**Claims, Numbers**

1-36	received on 26.09.2005 with letter of 19.09.2005
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**Drawings, Sheets**

1/7-3/7, 5/7, 7/7	as originally filed
4/7, 6/7	received on 26.09.2005 with letter of 19.09.2005

- a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing

3.  The amendments have resulted in the cancellation of:
  - the description, pages
  - the claims, Nos.
  - the drawings, sheets/figs
  - the sequence listing (*specify*):
  - any table(s) related to sequence listing (*specify*):
4.  This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
  - the description, pages
  - the claims, Nos.
  - the drawings, sheets/figs
  - the sequence listing (*specify*):
  - any table(s) related to sequence listing (*specify*):

\* If item 4 applies, some or all of these sheets may be marked "superseded."

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**Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

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**1. Statement**

Novelty (N)	Yes:	Claims	1-36
	No:	Claims	
Inventive step (IS)	Yes:	Claims	1-36
	No:	Claims	
Industrial applicability (IA)	Yes:	Claims	1-36
	No:	Claims	

**2. Citations and explanations (Rule 70.7):**

**see separate sheet**

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REPORT ON PATENTABILITY  
(SEPARATE SHEET)**

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**Concerning section V.2 (reasoned statement under Article 35(2) PCT)**

- 1 The various definitions of the invention given in independent claims 29, 31, 33, 35 and 30, 32, 34, 36 of overlapping scope are such that the claims as a whole are not concise, contrary to Article 6, Rule 6.1a PCT.
- 2 The invention relates to a method for charging costs of enjoying contents over a telecommunications network (method Claim 1), to a system (claim 20) for implementing the method, to a routing apparatus (claim 27), to an electronic file (claim 28) and correspondent computer programs and memory medium (claims 29-36).

Transaction of audio, video, software information is conventionally based on an advanced payment or subscription and later charge on user account.

In this context, Document D1=US2002/0128984, which is considered to be the nearest prior art, describes a transmission-based billing of content (PBBS). The transmitted content is modified by introducing a billing code which is used for charging purposes and then sent to the client device.

It is an object of the present invention to provide a secure and flexible way to access content and to charge for the cost.

In the current invention, a separate routing apparatus is employed which interconnects the user, the content provider server and an authorisation gateway and which is able to locate the authorisation gateway based on the user access code, thus allowing a secure and simple way to access multiple sites by using only one user's identity and one electronic wallet for payment.

Said solution is neither disclosed in nor rendered obvious by D1, wherein no separate routing apparatus is taught which is able to locate the authorisation gateway.

Claim 1 is therefore novel and considered to involve the required inventive step, Articles 32(2) and (3) PCT. The subject-matter of Claim 1 is also industrially

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applicable.

- 3 The same applies to independent claims 20, 27, 28, 29-36 which contain the same features of Claim 1 in terms of apparatuses, file, computer program or memory medium respectively.

Claims 20, 27, 28, 29-36, therefore, equally meet all the requirements of Article 33 PCT.

- 4 Dependent Claims 2 to 19 and 21 to 26 relate to further implementing details of the subject-matter defined in the claims to which they refer and are thus equally novel, inventive and industrially applicable.

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 <-> = Network-based billing methods and systems are known, for example,  
 from US2003/0074313, US2003/0023550 and US2001/0051902.  
**METHOD FOR CHARGING COSTS OF ENJOYING CONTENTS  
 TRANSMITTED OVER A TELECOMMUNICATIONS NETWORK,  
 PREFERABLY THE INTERNET NETWORK, AND RELATED SYSTEM**

5        The present invention refers to a method for charging costs of enjoying contents transmitted over a telecommunications network, preferably the Internet network, that allows charging only data effectively transmitted to users in a simple, reliable, sturdy, and safe way, complying with privacy of users.

10      The present invention further refers to the related system and to the related instruments and apparatuses necessary for performing the method.

15      More in particular, the present invention refers to a hardware/software platform performing the method proposed by the inventor for distributed management of a payment system for enjoying contents of any kind, as texts, audio ones, and video ones, over a telecommunications network such as the Internet network.

20      Presently, providers of textual, audio, video, or software information and contents (i.e. of any digital product or service hereinbelow indicated as "contents") operate on the Internet network through web sites providing for chargeable enjoyment of such services by using forms of subscription, on a monthly basis or through a form of payment for temporary use of the contents by means of pre-paid accounts.

25      A conventional electronic transaction is based on a certain content, which is delivered only after the payment has occurred, either as a single one or a subscription one. Mode is wholly similar to transactions having material goods as subject matter, i.e. once the payment has been made by the client or user, shipment of acquired goods is carried out.

30      These systems suffer from some drawbacks due to the fact that they are not much flexible nor proper for contents user and providers.

35      In fact, subscription is not implementable for contents enjoyment along a limited period (as for example in case of single consultation, or of consultations along few days), since contents providers require enabling subscription periods longer than that of effective enjoyment (for example it is usually required a monthly or yearly subscription).

Moreover, opening a dedicated account with each single provider is financially disadvantageous for the user, since he/she is

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compelled to subscribe several subscriptions with the various information providers which he/she wants to access.

Furthermore, enabling each subscription requires advance payment through on line procedure with on line payment by means of credit card, or with other electronic or traditional systems, which is not much suitable for payments of the order of cents or of residual amount.

Still, price required by contents providers on yearly or monthly basis sometimes results excessively expensive for the user who is compelled to pay for a service that he/she then uses for a very small part.

Moreover, the present system of on line payments (by means of credit card or other electronic payment system) is not much adapted for payment of small amounts as it may be the cost of a single consultation or access to an audio/video source, because of the high costs a single transaction operating on interbank circuits, and also because of the risks connected to using credit cards on the Internet network.

Presently, just because of lack of a practical system of payment for contents, on line contents providers, also known as "contents provider" or "CP", have as main profit source the sale of advertising spaces, which is not always capable to refund the service costs.

It is therefore an object of the present invention to solve this series of drawbacks and to remove obstacles which presently prevent a contents payment model from taking off, through a method for charging costs of enjoying contents transmitted over a telecommunications network, preferably the Internet network, that allows charging only data effectively transmitted to users in a simple, reliable, sturdy, and safe way, complying with privacy of users and ensuring safety of the payment system and of the delivery of chargeable contents.

It is a further object of the present invention to provide the instruments, the apparatuses, and the system performing the method.

US 2002/0128984 relates to some of these objects. In particular, it discloses computer- and network-based methods and systems for transmission-based billing, wherein a Packet-Based Billing System (PBBS) enables content provider to bill subscribers for the use of content on wired subscriber devices on a per-application, per-user basis based upon the extent of the usage. The PBBS provides modified content by

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inserting billing code into content returned to a requesting device. The modified content, when executed, tracks the amount of data sent and received between the content and a network and posts the accumulated data to a billing server according to business rules for an interval/frequency to post such data. The billing server stores the raw billing data and an accounting program retrieves the billing data to generate customer data records.

Instead, the above mentioned, <sup>according to the invention</sup> ~~such objects are reached through a platform independent from~~ the CP, the user and the possible financial institution, which arranges for checking the user identity, measuring the contents effectively transmitted from the CP to the user, and charging the user account for costs thereof.

It is specific subject matter of the present invention a method for charging costs of enjoying contents transmitted over a telecommunications network, preferably the Internet network, wherein chargeable contents, in the shape of one or more digital documents or files, are transmitted from said network comprising:

a server of a Content Provider (or CP) for transmitting chargeable contents in the form of one or more digital documents to a user, which the user accesses by means of a computer connected to said server through the network,

a gateway system for checking user authorisation to access the chargeable contents,

an electronic wallet for charging costs to an account of the user, which is integrated in at least one of said gateway system and said computer of the user, and

a routing electronic apparatus (1) for interconnecting said computer of the user, said server of the CP and said gateway system,

wherein the method comprises the following steps:

A. after having received an access code from the computer of the user, the server of the CP forwards said access code to said routing electronic apparatus,

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- B.... said routing electronic apparatus locates the gateway system as a function of the access code and transmits the access code to the gateway system for checking authorisation,
- C. after successful authorisation check, said gateway system transmits authorisation to the server of the CP,
- D. as a consequence of step C, said server of the CP associates additional information related to file charging criteria with at least one portion of a chargeable file and transmits to the computer of the user said at least one portion of a chargeable file,
- E. ~~at each transmission of said at least one portion of a chargeable file~~, said routing electronic apparatus reads said additional information associated with the file and transmits to the electronic wallet data related to charging as a function of said additional information associated with the file.

- ~~at least one server of a Contents Provider (or CP), which a user accesses by means of a computer connected to said at least one server through the telecommunications network, a gateway system carrying out the checks for authorisation of the user's access to the chargeable contents, an electronic wallet performing operations of charging costs to a user's account, the method being characterised in that it preliminary associates one or more additional information related to file charging criteria with each chargeable file, and in that it comprises the following steps:~~
- 5           A. at each transmission of at least one portion of a chargeable file from said at least one server of the CP to the user's computer, reading and interpreting said additional information associated with the file;
- 10           B. transmitting to the user's computer said at least one portion of the chargeable file; and
- 15           C. transmitting to the electronic wallet data related to charging as a function of said additional information associated with the file.
- Always according to the invention, the electronic wallet may be integrated into the gateway system.
- Still according to the invention, the electronic wallet may be integrated into the user's computer.
- 20           Preferably according to the invention, at least one part of steps A, B, and C is performed by a routing electronic apparatus or application router, that will be hereinbelow called as "Value Added Router" or "VA router".
- 25           Always according to the invention, said additional information associated with each chargeable file may comprise:
- a file type, preferably according to MIME encoding, and/or
- a charging mode preferably selected from the group comprising start charge, end charge, and charge during streaming, and/or
- a tariff unit, preferably selected from the group comprising packet unit, document unit, flat rate unit, and/or
- a tariff unit cost, and/or
- a tariff unit interval for charging, and/or
- a user's identification code, and/or
- a CP identification code, and/or
- a file title or identifier.
- 35           Still according to the invention, said at least one chargeable file portion transmitted in step A may be included in a data packet.

Furthermore according to the invention, said additional information associated with each chargeable file may be directly encoded in the chargeable file and/or are included in an auxiliary file associated with the chargeable file. Said additional information associated with the chargeable file, in one of the modes identified above, form a specific protocol that is read and interpreted by the VA router. In the following, such protocol will be called as "VAP" or "Value Added Protocol" protocol.

Always according to the invention, said at least one chargeable file portion and said associated additional information may be encoded in a transmission protocol.

Still according to the invention, said at least one chargeable file portion transmitted in step A<sup>D</sup> may be included in a data packet encoded in the VAP protocol.

Always according to the invention, step C<sup>E</sup> may be performed immediately before start of transmission of step B<sup>D</sup> or immediately after the end of transmission of step B<sup>D</sup> or periodically during transmission of step B<sup>D</sup>.

Still according to the invention, the method may further comprise the following step:

D. at each transmission of at least one chargeable file portion from said at least one CP server to the user's computer, reading and/or recording data related to charging as a function of said additional information associated with the file.

Furthermore according to the invention, step D<sup>E</sup> may be periodically performed independently from time periods of transmission of step B.

Always according to the invention, step D may be performed by the router.

Still according to the invention, the gateway system may comprise a first gateway apparatus.

Furthermore according to the invention, the gateway system may be distributed and may comprise at least a second gateway apparatus connected to the first gateway apparatus.

Always according to the invention, the gateway system may operate according to the mechanism of clearing houses used in financial environment.

Still according to the invention, the gateway system and/or the router may operate as escrow between the server and the user accessing

~~by means of the computer. In the method according to the invention and in the related system, the router by itself or in combination with the gateway may operate according to the mechanism of the escrow service, i.e. as fiduciary service independent from the user and the server, checking that chargeable content transmission reaches the user and that only what effectively transmitted is charged, owing to the fact that it performs step D.~~

Still according to the invention, in step B information related to cost and/or to the status of chargeable file transmission may be transmitted to the user's computer.

Always according to the invention, the user may be apt to access two or more servers by means of the computer by inputting data registered in the gateway system which define a sole user's digital identity recognised as valid for all said two or more servers. In particular, the user may use a sole username and a sole password, i.e. a sole identity, previously registered with a gateway, operating as a sign-one system, where the user may access two or more sites, which implement the daemon software operating on the server, by using a sole digital identity. In other words, the user may access two or more servers, on which the daemon software operates, through a unique authentication valid for all the sites. Such goal is possible owing to the fact that the router keeps records of the user's session and automatically authenticates the user for the second server.

Still according to the invention, the router may read and interpret a user's digital identity for locating, through a gateway search system (using at least one DNS - Domain Name System - function), an IP address of the gateway system corresponding to the user's one, the router forwarding to the gateway system the authentication request and carrying out charging of contents uses enjoyed by the user accessing by means of the computer. In particular, the router may implement a gateway search system that reads and interprets the user's identity, by using the domain name of the user's username (preferably in the shape of username@gatewaydomain, where gatewaydomain is the domain-name of the gateway with which the user is registered), for locating the IP address of the gateway corresponding to the one of the user, through a query to a DNS system. The router will use the gateway so located among multiple gateways, forwarding the authentication request to it and carrying out charging of contents uses enjoyed by the user.

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*system*

--It is still subject matter of the present invention a system for charging costs of enjoying contents transmitted over a telecommunications network, preferably the Internet network, comprising at least one server of a said network comprising:

a server of a Content Provider (or CP) for transmitting chargeable contents in the form of one or more digital documents to a user, which the user accesses by means of a computer connected to said server through the network,

a gateway system for checking user authorisation to access the chargeable contents,

an electronic wallet for charging costs to an account of the user, which is integrated in at least one of said gateway system and said computer of the user, and

a routing electronic apparatus for interconnecting said computer of the user, said server of the CP and said gateway system,

wherein the system is adapted to perform *any of the steps of* the previously described method.

Preferably according to the invention, said at least one server is provided with a plug-in or daemon software, interfacing the http server program that associates said additional information related to file charging criteria with each chargeable file.

Always according to the invention, said at least one server may perform steps A, B, and C of the previously described method for charging costs of enjoying contents transmitted over a telecommunications network

Preferably according to the invention, the system further comprises a routing electronic apparatus or router (the VA router), comprising a processing unit, one or more memory units, one or more input/output interfaces, apt to connect to said at least one server, to the gateway system, and to said one or more computers, and apt to perform steps A, B, and C of the previously described method for charging costs of enjoying contents transmitted over a telecommunications network.

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It is further subject matter of the present invention a routing electronic apparatus or VA router, comprising a processing unit, one or more memory units, one or more input/output interfaces, characterised in that it is apt to be used in a system for charging costs of enjoying contents transmitted over a telecommunications network as previously illustrated, wherein the VA router is apt to connect to said at least one server, to the gateway system, and to said one or more computers, and it is apt to perform steps A, B, and C of the previously described method for charging costs of enjoying contents transmitted over a telecommunications network.

It is still subject matter of the present invention an electronic document or file, preferably encoded in the VAP protocol, apt to be

transmitted by at least one server of a Contents Provider (or 'CP) in exchange of a payment according to the previously described method for charging costs of enjoying contents transmitted over a telecommunications network, and in that it is provided with said additional information associated with it.

5 It is another subject matter of the present invention a computer program characterised in that it comprises code means adapted to execute, when running on at least one computer, steps A, B, and C of the previously described method for charging costs of enjoying contents transmitted over a telecommunications network.

10 It is further subject matter of the present invention a memory medium, readable by a computer, storing a program, characterised in that the program is the just described computer program.

15 It is also subject matter of the present invention a computer program characterised in that it comprises code means adapted to execute, when running on a router, step A of the previously described method for charging costs of enjoying contents transmitted over a telecommunications network.

20 It is further subject matter of the present invention a memory medium, readable by a computer, storing a program, characterised in that the program is the just described computer program.

25 It is still subject matter of the present invention a computer program characterised in that it comprises code means adapted to execute, when running on at least one server of a Contents Provider (or 'CP) apt to transmit one or more chargeable file, the operation of association of one or more additional information related to file charging criteria with each chargeable file, <sup>within the previously described method.</sup> Said program may further include functions allowing said server administrator, by way of example, to:

30 a) configure the IP address of the main VAR and a backup secondary one; and

b) set charging modes, financial remunerations, contents depending on the contents type, time and criteria for access.

35 It is further subject matter of the present invention a memory medium, readable by a computer, storing a program, characterised in that the program is the just described computer program.

It is also subject matter of the present invention a computer program characterised in that it comprises code means adapted, when

running on at least one computer, to interface to the http server of the server and to re-address the authentication requests of at least one user and the data flow towards the router of which it has stored the IP address,<sup>within the previously described method</sup>

5 It is still subject matter of the present invention a memory medium, readable by a computer, storing a program, characterised in that the program is the just described computer program.

10 The present invention will be now described, by way of illustration and not by way of limitation, according to its preferred embodiments, by particularly referring to the Figures of the enclosed drawings, in which:

Figure 1 shows a schematic diagram of a first embodiment of the method according to the invention;

Figure 2 shows a first schematic diagram of a second embodiment of the system according to the invention;

15 Figure 3 shows a second schematic diagram of the system of Figure 2;

Figures 4a and 4b show a flow diagram of a third embodiment of the method according to the invention;

20 Figure 5 shows a schematic diagram of a fourth embodiment of the method according to the invention; and

Figure 6 shows a flow diagram including the steps and the interaction among the various devices and the communication flow according to a preferred embodiment of the method according to the invention.

25 In the following of the description same references will be used to indicate alike elements in the Figures.

The method according to the invention is based on an inventive conception on electronic transaction, based on the centrality of the information type, causing payment of data packets, preferably embedded in the VAP protocol, which actually are a digital product, rather than the same product (the information content) as a whole.

30 With reference to Figure 1, it may be observed that the contents payment system according to the invention is implemented according to a distributed architecture comprising: a routing electronic apparatus or VA router 1, a transaction distributed processing platform or payment gateway 2, and a software or "daemon" operating on server 3 of the Contents Provider.

information, preferably by inputting a pair of access enabling identifiers, according to the traditional scheme of a pair of access keys (user name and password). CP server 3 arranges for forwarding the authentication request to gateway 2, possibly belonging to an organisation independent from the CP. Alternatively, such authentication request may be managed by the router 1 operating as intermediary or escrow between server 3 and gateway 2 and the user's computer 4.

Previously, the user has arranged to activate his/her own account with gateway 2 (or, alternatively, with a second gateway, 10 belonging to another Contents Payment Provider, different from gateway 2 and connected thereto) through a payment mode that may be of a prepaid type, or a deductible credit or monthly/yearly charges to be paid later. The payment of the amount may be done by means of credit card, or through other on line payment system, or electronic money, or in a traditional manner (for example, bank payments).

Once gateway 2 has verified the authenticity of the user, gateway 2 communicates to CP server 3 the authorisation to deliver the chargeable contents. The communication of the authorisation may be 15 preferably forwarded by VA router 1 to gateway 2 and from this to server 3. At this point, the user may use all the Contents he/she wants and these will be charged to the user's account according to modes set in advance by the CP, as for example as a function of the spent time, and/or as a function of the importance of delivered information, and/or as a function of the performed single operations (such as searches, or data analysis), and/or as a function of other tariff computation modes, on the basis of the 20 peculiarity of the offered contents. Before accessing the chargeable area, the user is advised of the charging modes in order to give a transparent service enjoyment. Alternatively, costs and charging modes are displayed 25 through the interface of the site or remote resource, or they are displayed in the content link, even by means of explanatory dynamic labels.

The charging process involves VA router 1 after authentication, since the contents are not directly forwarded by server 3 to the user's computer 4, but rather data flow (preferably encoded according to a suitable application protocol, still more preferably the VAP protocol) passes through the router 1, which arranges for sending, to the user's gateway 2, data useful to tariff computation and other information useful to 30 functions of tariff computation and user's account management. In other 35

CLAIMS

1. A method for charging costs of enjoying contents transmitted over a telecommunications network, preferably the Internet network, said network comprising:

a server (3) of a Content Provider (or CP) for transmitting chargeable contents in the form of one or more digital documents to a user, which the user accesses by means of a computer (4) connected to said server (3) through the network,

a gateway system (2, 5) for checking user authorisation to access the chargeable contents,

an electronic wallet for charging costs to an account of the user, which is integrated in at least one of said gateway system and said computer of the user, and

a routing electronic apparatus (1) for interconnecting said computer of the user, said server of the CP and said gateway system,

wherein the method comprises the following steps:

A. after having received an access code from the computer of the user, the server of the CP forwards said access code to said routing electronic apparatus,

B. said routing electronic apparatus locates the gateway system as a function of the access code and transmits the access code to the gateway system for checking authorisation,

C. after successful authorisation check, said gateway system transmits authorisation to the server of the CP,

D. as a consequence of step C, said server of the CP associates additional information related to file charging criteria with at least one portion of a chargeable file and

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transmits to the computer of the user said at least one portion of a chargeable file;

E. at each transmission of said at least one portion of a chargeable file, said routing electronic apparatus reads said additional information associated with the file and transmits to the electronic wallet data related to charging as a function of said additional information associated with the file.

2. A method according to claim 1, wherein said access code comprises a username and a password of the user.

3. A method according to claim 1 or 2, wherein the locating operation of step B is performed by means of a correspondence table integrated in said electronic routing apparatus, said table relating IP addresses to gateway systems.

4. Method according to ~~any one of claim 1 to 3~~, characterised in that said additional information associated with each chargeable file comprise:

a file type, preferably according to MIME encoding, and/or

a charging mode preferably selected from the group comprising start charge, end charge, and charge during streaming, and/or

a tariff unit, preferably selected from the group comprising packet unit, document unit, flat rate unit, and/or

a tariff unit cost, and/or  
 a tariff unit interval for charging, and/or  
 a user's identification code, and/or  
 a CP identification code, and/or  
 a file title or identifier.

5

<sup>5</sup> 6. Method according to any one of the preceding claims, characterised in that said at least one chargeable file portion transmitted in step A is included in a data packet.

10

6. Method according to any one of the preceding claims, characterised in that said additional information associated with each chargeable file are directly encoded in the chargeable file and/or are included in an auxiliary file associated with the chargeable file.

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<sup>7</sup> 8. Method according to any one of the preceding claims, characterised in that said at least one chargeable file portion and said associated additional information are encoded in a transmission protocol.

20

<sup>8</sup> 9. Method according to any one of the preceding claims, characterised in that step D is performed immediately before start of transmission of step B or immediately after the end of transmission of step D or periodically during transmission of step B.

25

<sup><=></sup> 10. Method according to any one of the preceding claims, characterised in that it further comprises the following step:  
~~D. at each transmission of at least one chargeable file portion from said at least one CP server (3) to the user's computer (4), reading and/or recording data related to charging as a function of said additional information associated with the file.~~

30

<sup>10</sup> 11. Method according to claim 10, characterised in that step E is periodically performed independently from time periods of transmission of step B.

~~12. Method according to claim 10 or 11, when depending on claim 4, characterised in that step D is performed by the router (1).~~

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<sup>11</sup> 13. Method according to any one of the preceding claims, characterised in that the gateway system (2, 5, 7) comprises a first gateway apparatus (2).

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12. 14. Method according to claim 13, characterised in that the gateway system (2, 5, 7) is distributed and comprises at least a second gateway apparatus (5, 7) connected to the first gateway apparatus (2).

<sup>13</sup> <=> 15. Method according to claim 14, characterised in that the

Method according to any one of the preceding claims, wherein the gateway system (2, 5, 7) records transactions and has an accounting function with respect to said user and content provider.

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~~15. Method according to claim 14, wherein the computer (4) of the user is provided with a software for reading and displaying the information related to cost and/or status.~~

gateway system (2, 5, 7) operates according to the mechanism of clearing houses used in financial environment.

~~16. Method according to any one of the preceding claims, characterised in that the gateway system (2, 5, 7) operates as escrow between the server (3) and the user accessing by means of the computer (4).~~

~~17. Method according to claim 4 or any one of claims 5-16, when depending on claim 4, characterised in that the router (1) operates as escrow between the server (3) and the user accessing by means of the computer (4).~~

~~18. Method according to any one of the preceding claims, characterised in that in step B information related to cost and/or to the status of chargeable file transmission are transmitted to the user's computer (4).~~

~~19. Method according to any one of the preceding claims, characterised in that the user is apt to access two or more servers (3) by means of the computer (4) by inputting data registered in the gateway system (2, 5, 7) which define a sole user's digital identity recognised as valid for all said two or more servers (3).~~

~~20. Method according to claim 4 or any one of the preceding claims, when depending on claim 4, characterised in that the router (1) reads and interprets a user's digital identity for locating, through a gateway search system using at least one DNS (Domain Name System) function, an IP address of the gateway system (2, 5, 7) corresponding to the user's one, the router (1) forwarding to the gateway system (2, 5, 7) the authentication request and carrying out charging of contents user enjoyed by the user accessing by means of the computer (4). <1>~~

~~21. System for charging costs of enjoying contents transmitted over a telecommunications network, preferably the Internet network, comprising at least one server (3) of a Contents Provider (or CP), apt to transmit chargeable contents, in the shape of one or more digital documents or files, one or more computers (4), by means of which one or more users access said at least one server (3), a gateway system (2, 5, 7), apt to carry out checks of authorisation of user's access to the chargeable contents and operations of charging costs to a user's account, the system being characterised in that it performs the method for charging costs of enjoying contents transmitted over a telecommunications network~~

~~<1> 19. Method according to any one of the preceding claims, wherein the gateway system (2, 5) is interfaced with an external sign-on authentication system (7).~~

25a

20. A system for charging costs of enjoying contents transmitted over a telecommunications network, preferably the Internet network, said network comprising:

a server (3) of a Content Provider (or CP) for transmitting chargeable contents in the form of one or more digital documents to a user, which the user accesses by means of a computer (4) connected to said server (3) through the network,

a gateway system (2, 5) for checking user authorisation to access the chargeable contents,

an electronic wallet for charging costs to an account of the user, which is integrated in at least one of said gateway system and said computer of the user, and

a routing electronic apparatus (1) for interconnecting said computer of the user, said server of the CP and said gateway system,  
*any of the steps of*  
wherein the system is adapted to perform the method according to any one of the preceding claims.

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according to any one of the preceding claims 1-20.

21 22. System according to claim 21, characterised in that said at least one server (3) is provided with a plug-in or daemon software, interfacing the http server program that associates said additional information related to file charging criteria with each chargeable file.

5 23. System according to claim 21 or 22, characterised in that said at least one server (3) performs steps A, B, and C of the method for charging costs of enjoying contents transmitted over a telecommunications network according to any one of claims 1-3, or according to any one of claims 5-20, when not depending on claim 4.

10 24. System according to claim 21 or 22, characterised in that it further comprises a routing electronic apparatus or router (1), comprising a processing unit, one or more memory units, one or more input/output interfaces, apt to connect to said at least one server (3), to the gateway system (2, 5, 7), and to said one or more computers (4), and apt to perform steps A, B, and C of the method for charging costs of enjoying contents transmitted over a telecommunications network according to claim 4 or according to any one of claims 5-20, when depending on claim 4.

20 25. System according to any one of claims from 21 to 24, characterised in that the gateway system (2, 5, 7) comprises a first gateway apparatus (2).

25 26. System according to claim 25, characterised in that the gateway system (2, 5, 7) is distributed and comprises at least a second gateway apparatus (5, 7) connected to the first gateway apparatus (2).

30 27. System according to claim 26, characterised in that the gateway system (2, 5, 7) operates according to the mechanism of clearing houses used in financial environment. <11>

35 28. Routing electronic apparatus or router (1), comprising a processing unit, one or more memory units, one or more input/output interfaces, characterised in that it is apt to be used in a system for charging costs of enjoying contents transmitted over a telecommunications network according to claim 24 or any one of claims from 25 to 27, when depending on claim 24, wherein the router (1) is apt to connect to said at least one server (3), to the gateway system (2, 5, 7), and to said one or more computers (4), and it is apt to perform steps A, B, and C of the method for charging costs of enjoying contents transmitted over a

L1D= 29. System according to any one of claims from 20 to 25, wherein the gateway system (2, 5, 7) is interfaced with an external sign-one authentication system (7).

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telecommunications network according to claim 4 or any one of claims 5-  
20, when depending on claim 4.

28 29. Electronic document or file, apt to be transmitted by at least  
one server (3) of a Contents Provider (or CP) in exchange of a payment  
5 according to the method for charging costs of enjoying contents  
transmitted over a telecommunications network according to any one of  
the preceding claims 1-20, and in that it is provided with said additional  
information associated with it.

29 30. Computer program characterised in that it comprises code  
means adapted to execute, when running on at least one computer, steps  
D, E, and F of the method for charging costs of enjoying contents  
transmitted over a telecommunications network according to any one of  
the preceding claims 1-20.

30 31. Memory medium, readable by a computer, storing a  
15 program, characterised in that the program is the computer program  
according to claim 30.

31 32. Computer program characterised in that it comprises code  
means adapted to execute, when running on a router (1), step A of the  
method for charging costs of enjoying contents transmitted over a  
20 telecommunications network according to any one of the preceding claims  
1-20.

32 33. Memory medium, readable by a computer, storing a  
program, characterised in that the program is the computer program  
according to claim 32.

25 33. Computer program characterised in that it comprises code  
means adapted to execute, when running on at least one server (3) of a  
Contents Provider (or CP) apt to transmit one or more chargeable file, the  
operation of association of one or more additional information related to  
file charging criteria with each chargeable file, within the method according to any  
30 34. Memory medium, readable by a computer, storing a  
program, characterised in that the program is the computer program  
according to claim 34.

35 35. Computer program characterised in that it comprises code  
means adapted, when running on at least one computer, to interface to the  
http server of the server (3) and to re-address the authentication requests  
of at least one user and the data flow towards the router (1) of which it has  
stored the IP address, within the method according to any one of the  
preceding claims 1-19.

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<sup>36</sup>  
<sup>37</sup>. Memory medium, readable by a computer, storing a program, characterised in that the program is the computer program according to claim <sup>35</sup> 36.

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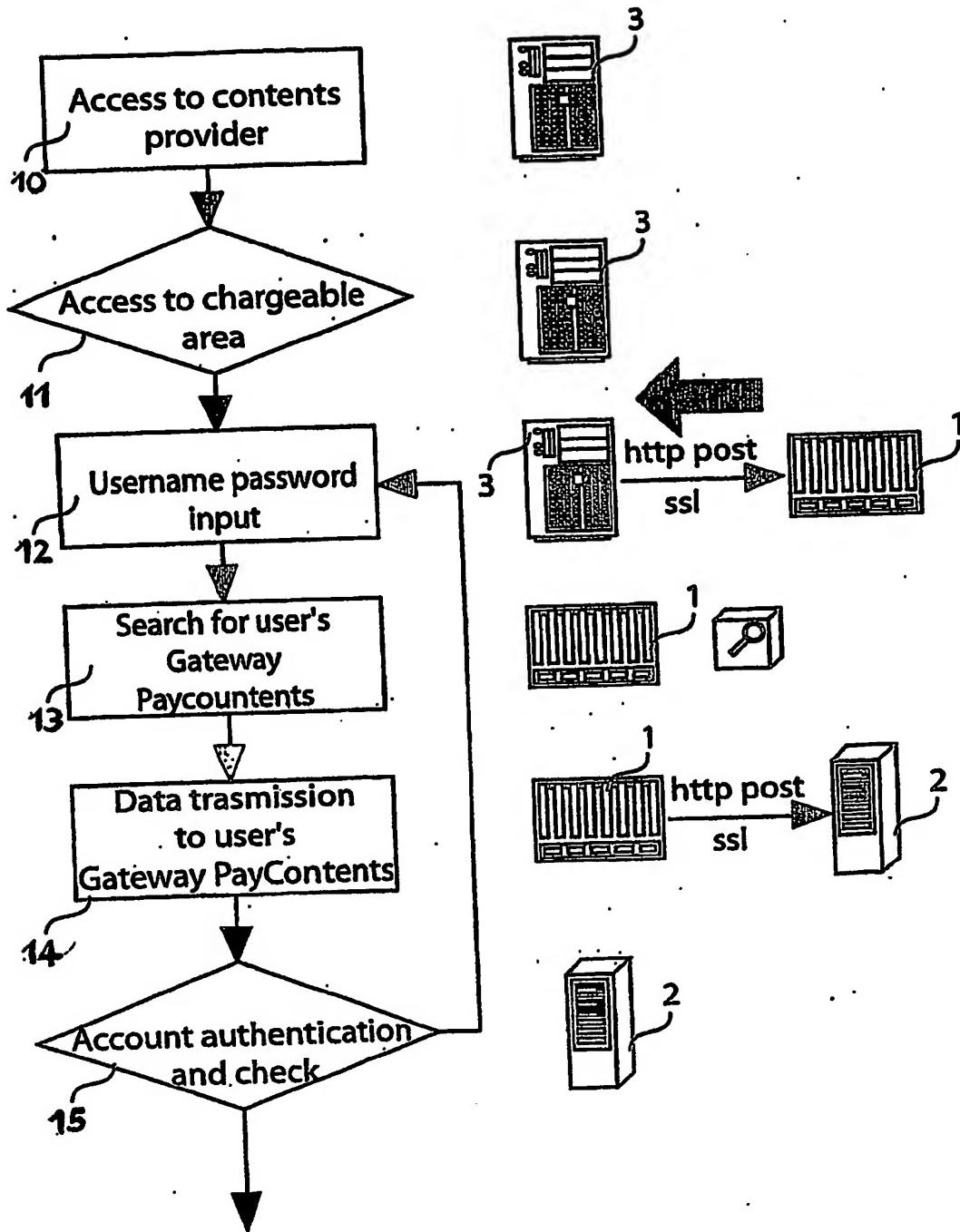


Fig. 4a

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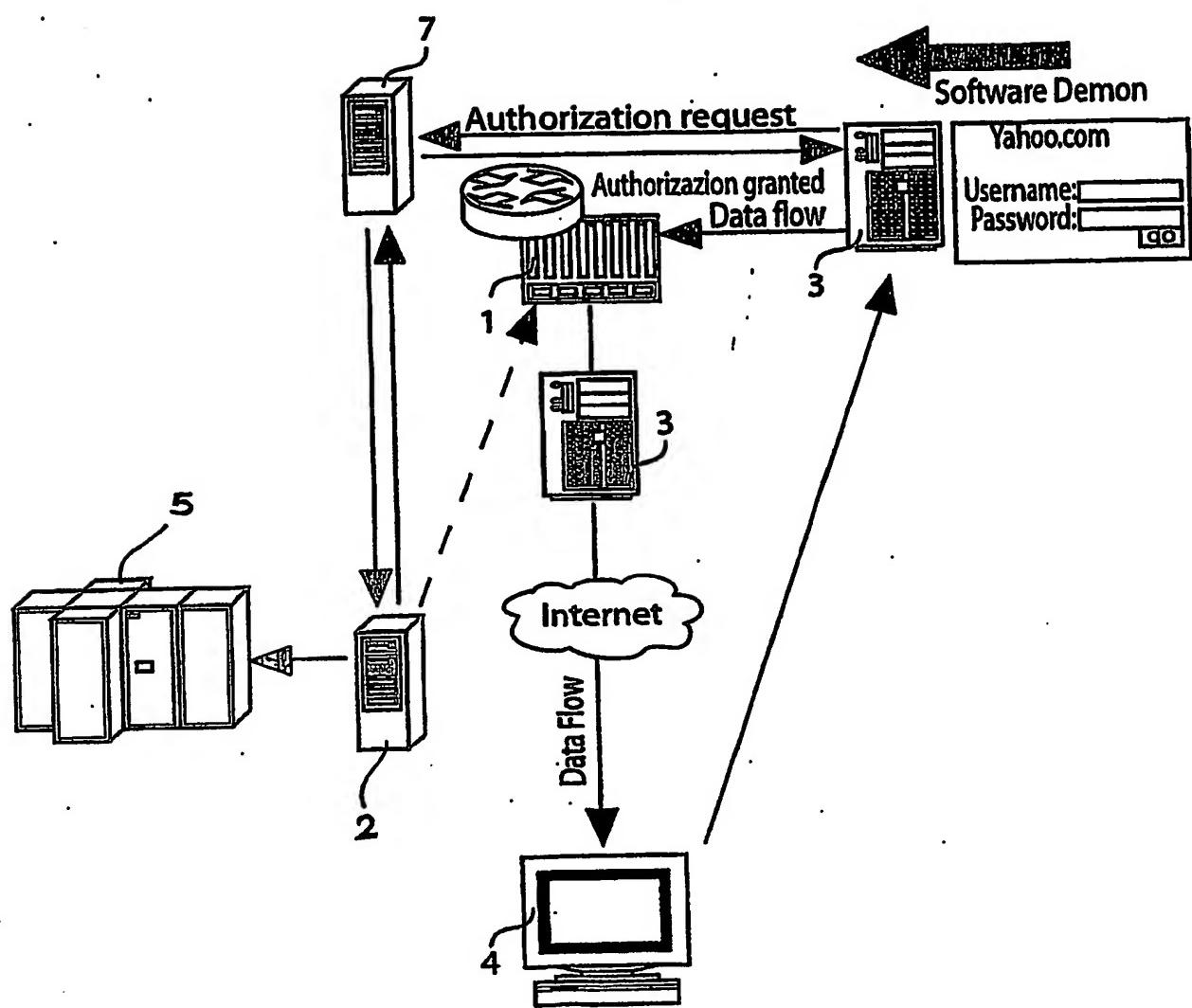


Fig. 5